

Brookhaven National Laboratory National Synchrotron Light Source		Number: LS-OPS-0038	Revision: B
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Subject: VACUUM PROCEDURES FOR BEAMLINE U2A			
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*Document must contain approved signatures for validity.

The following procedures must be followed when bleeding up different beam line sections and when returning these sections to operation .

**I. SECTION BETWEEN VALVE V1 AND VALVE V3
(PROCEDURE TO BE PERFORMED BY NSLS VACUUM GROUP ONLY)**

A. Bleed-Up

1. Notify the Coordinator (Beeper 5824).
2. Refer to Front-End Vacuum Procedures (SLS-07.19-13-1).

B. Return to Operation

1. Notify the Coordinator (Beeper 5824).
2. Refer to Front-End Vacuum Procedures (SLS-07.19-13-1).

II. SECTION BETWEEN VALVE V3 AND DIAMOND WINDOW

A. Bleed-Up

1. Notify the Coordinator (Beeper 5824).
2. Close and seal Valve V3 and Valve V1.
3. Hook up turbo pump to this section and isolate turbo.
4. Coordinator places Yellow Tags on Valve V3 and Valve V1.
5. Slowly bleed up with boil-off N₂ while Coordinator monitors pressure on Gauge G1.

B. Return to Operation

1. Bake and pump to < 2.0 x 10⁻⁹ Torr.
2. Notify the Coordinator (Beeper 5824).
3. Prepare for RGA scan.*
4. Open Valve V3 and Valve V1 provided pressure at Gauge G1 < 2.0 x 10⁻⁹ Torr.
5. Perform RGA scan.*
6. If RGA scan or pressure reading (if no RGA scan required) is satisfactory, Coordinator removes Yellow Tags from Valve V3 and Valve V1.
7. Remove any unprotected turbo pump from this section or valve off the turbo pump and place a Yellow Tag on the valve.**

III. SECTION DOWNSTREAM OF DIAMOND WINDOW

The beamline section downstream of the Diamond Window is always isolated from the storage ring. Therefore, no approvals from the NSLS Vacuum Group or an Operations Coordinator is necessary for this procedure. Specific instructions and authorized personnel for this section is available at the beamline.

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*** NSLS POLICY FOR RGA SCANS (24 HOUR NOTICE REQUIRED)**

An RGA scan is required before returning to operation if there is a major change of hardware in the vacuum system, i.e. changing of samples, mirrors, windows, monochromator crystals or gratings, manipulators, detectors, etc., **with the following two exceptions:**

1. After UHV sample chambers have been bled up for replacing components, an RGA scan will not be required if the chamber pressure is returned to $< 2 \times 10^{-9}$ Torr and the Front End pressure remains $< 2 \times 10^{-9}$ Torr when vacuum sections upstream of the chamber are opened into the Front End.
2. If any vacuum section upstream of the bled-up section remains at a pressure of $< 9 \times 10^{-10}$ Torr as read using a hot-filament ion gauge, when the entire beamline is opened into the Front End, and the Front End pressure does not increase, no RGA is required.

**** NSLS TURBO PUMP POLICY**

An unprotected turbo pump is one not separated from the Front End by a beamline valve which automatically closes in the event of a power loss or a pressure increase at the turbo pump. **No unprotected turbo pump can share a contiguous vacuum with the Front End.**

NSLS REVISION/REVIEW LOG	
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> See NSLS Quality Control Coordinator for review signatures <

REVISION TABLE		
Rev	Description	Date
B	Revised to controlled document format	01/01/02